WHAT IS CLAIMED IS:

1. A process for converting hydrocarbons by contacting a feed with a solid acid catalyst, comprising a support comprising a sulfated oxide or hydroxide of at least an element of Group IVB (IUPAC 4) of the Periodic Table, a first component selected from the group consisting of at least one lanthanide-series element, mixtures thereof, and yttrium, and a second component selected from the group of platinum-group metals and mixtures thereof, to give a converted product.

2. The process of Claim 1 wherein the hydrocarbon conversion process is selected from the group consisting of cracking, hydrocracking, aromatic alkylation, isoparaffin alkylation, isomerization, polymerization, reforming, dewaxing, hydrogenation, dehydrogenation, transalkylation, dealkylation, hydration, dehydration, hydrotreating, hydrodenitrogenation, hydrodesulfurization, methanation, ring opening, and syngas shift.

3. The process of Claim 1 wherein the atomic ratio of the first component to the second component is at least about 2.

4. The process of Claim 1 wherein the catalyst further comprises from about 2 to about 50 mass-% of a refractory inorganic-oxide binder.

5. The process of Claim 4 wherein the refractory inorganic-oxide binder comprises alumina.

6. The process of Claim 1 wherein the first component consists essentially of one single lanthanide element component for a yttrium component, and the second component consists essentially of one single metal selected from the platinum-group metals.

7. A process for the isomerization of a paraffinic feedstock to obtain a product having an increased isoparaffin content comprising contacting the paraffinic feedstock in an isomerization zone maintained at isomerization conditions comprising a temperature of from 40 to 250°C, pressure of from 100 kPa to 10 MPa and liquid hourly space

velocity of from 0.2 to 25 hr^{-1} with a solid acid isomerization catalyst, comprising a sulfated support comprising an oxide or hydroxide of elements of Group IVB (IUPAC 4) of the Periodic Table, a first component selected from the group consisting of at least one lanthanide-series element, mixtures thereof, and yttrium, and a second component selected from the group of platinum-group metals and mixtures thereof, and recovering an isoparaffin-rich product.

8. The process of Claim 7 wherein free hydrogen is present in the isomerization zone in an amount from about 0.01 to about 20 moles per mole of C_5+ hydrocarbons present in the zone.

9. The process of Claim 7 wherein the isomerization conditions comprise a temperature from about 100 to about 200°C, a pressure from about 300 kPa to about 4 MPa, and a liquid hourly space velocity of from 0.5 to 15 hr^{-1}, and wherein free hydrogen is present in the isomerization zone in an amount from about 0.05 to 5 moles per mole of C_5+ hydrocarbons present in the zone.

10. The process of Claim 7 wherein the isomerization catalyst further comprises a refractory inorganic-oxide binder.

11. The process of Claim 7 wherein the catalyst further comprises from about 2 to about 50 mass-% of a refractory inorganic-oxide binder.

12. The process of Claim 11 wherein the refractory inorganic-oxide binder comprises alumina.

13. The process of Claim 7 wherein the atomic ratio of the first component to the second component is at least about 2.

14. The process of Claim 7 wherein the first component is selected from the group consisting of ytterbium, lutetium, thulium, or mixtures thereof and the second component is platinum.

15. The process of Claim 7 wherein the catalyst further comprises a third component selected from the group consisting of iron, cobalt, nickel, rhenium, and mixtures thereof.

16. The process of Claim 15 wherein the third component is iron in an amount from about 1 to about 5 wt.%.

17. The process of Claim 7 further comprising using at least a portion of the isoparaffin-rich product to blend a gasoline product.